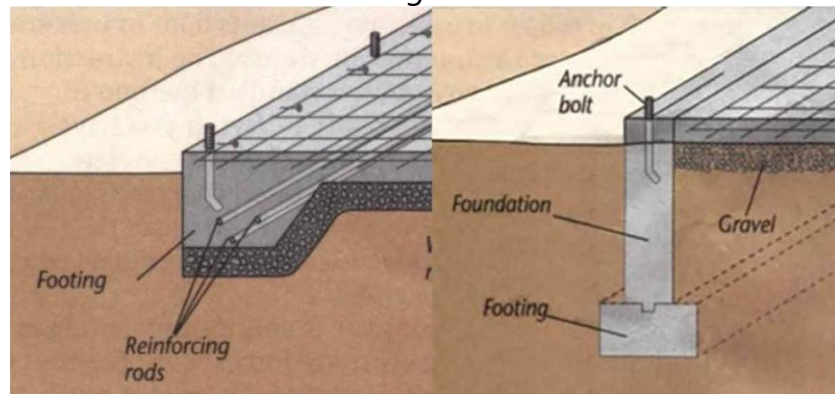




Accessory Building Foundation Design

When constructing an Accessory Building the maximum floor area shall conform to Table 4.1 and 4.2 in the Zoning By-Law.

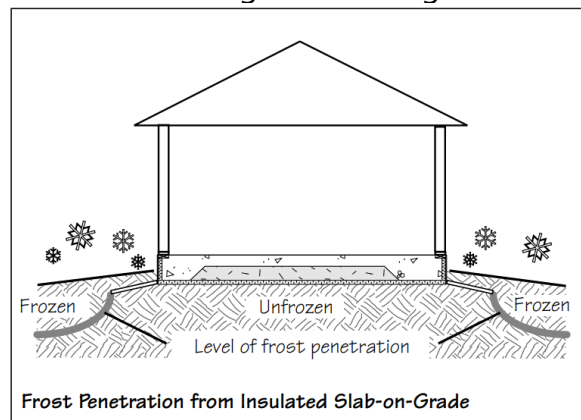
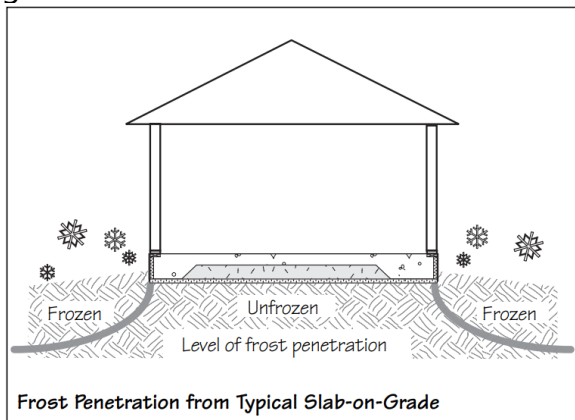
There are two types of concrete foundations one can use: floating slab (slab-on-grade) construction or foundation wall with footing.



Building over 55m² (592 ft²) in area, larger than 1 storey and are of masonry construction will require the drawings to be stamped by a certified Engineer.

Slab-on-grade Design Principles (Heated Spaces)

The most significant heat loss from slab-on-grade occurs in the perimeter band of soil immediately adjacent to the building. By strategically placing rigid insulation in the ground, this heat loss can be used to keep the slab from freezing and heaving.



Horizontal insulation installed in “wings” sloping outward, around the perimeter of the slab, has the following benefits:

- It extends the heat flow path,
- It controls heat loss,
- It moves the line of frost penetration away from the slab, reducing frost heave



Degree Days

The Degree Day Rating of Port Hope is 3970. This rating provides an indication of the severity of the climatic conditions and determines the size of the insulation wing.

Insulation Wing Size

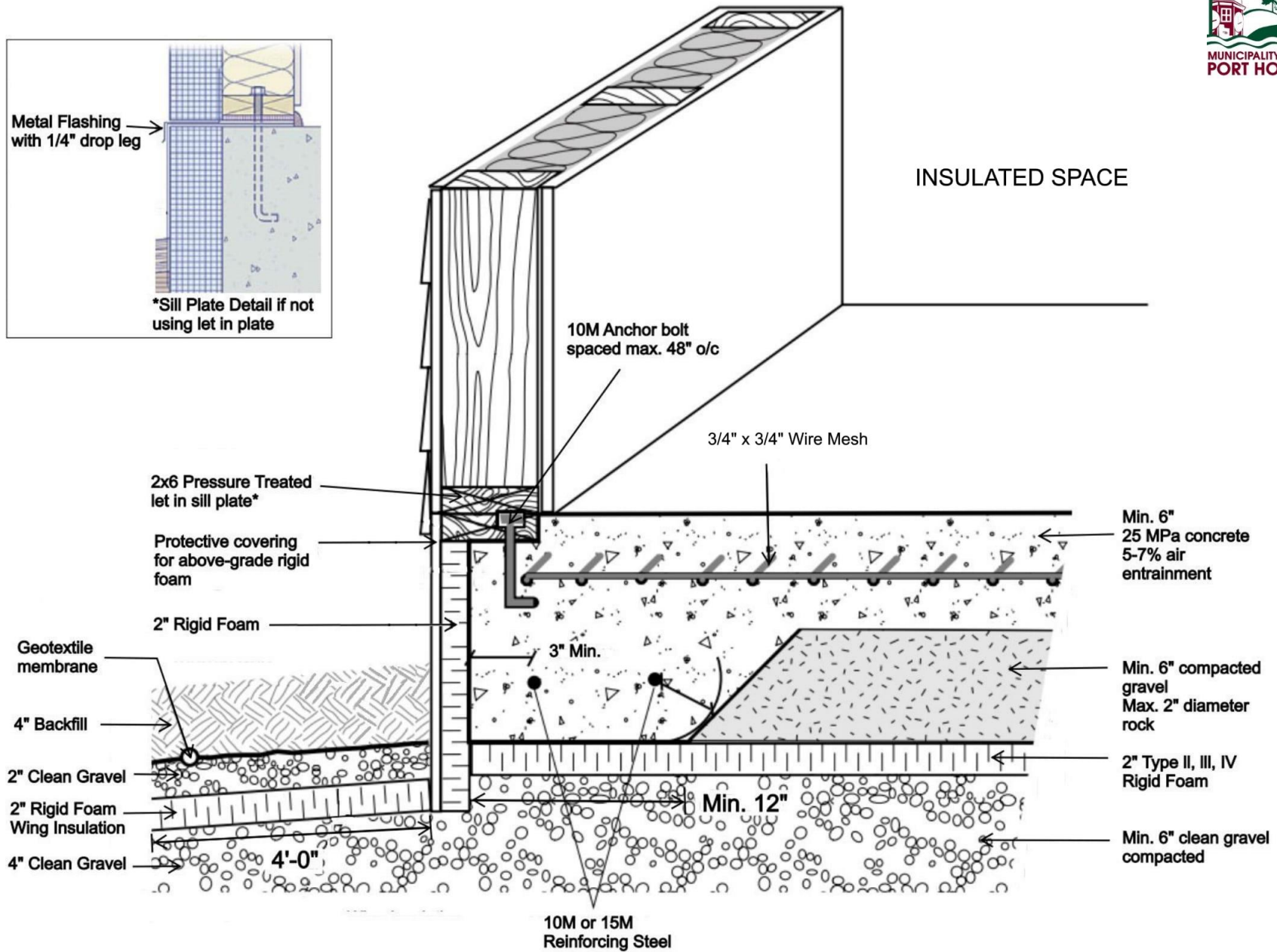
Based on the degree days for Port Hope, we require a 4' (1.2m) wing. This design will produce a foundation with a typical cross section as shown on the following page.

Slab Construction [OBC 9.39.1.4.] (Unheated Spaces)

- The concrete specified is a minimum of 25 MPa, with 5-7% air entrainment
- Slab is minimum 5" (125mm) thick
- All reinforcing steel (10M bars) placed in the concrete are to be spaced a maximum of 8" (200mm) on center in each direction. They must be covered with a minimum of 1-1/4" (30mm) of concrete (top, bottom and edges). The second layer of bars are laid directly on top of the lower layer in the opposite direction
- The slab shall be anchored to the walls with 1/2" diameter (10M) anchor bolts spaced a maximum of 48" (600mm) on center
- Exposed slabs shall be sloped to effectively shed water away from the exterior wall
- See OBC Section 9.35 for residential garages and carports

Better Building Practices

- The excavation is sloped away from the building and lined with a minimum of 6" (150mm) of free-draining granular material
- The entire slab is insulated to a level of R10 (RSI 1.8). Insulation in contact with the soil is Expanded Polystyrene Type II or Type III, or Extruded Polystyrene Type IV, meeting requirements of CGSM 51.20-M.
- A 6-mil polyethylene sheet is provided over top of the sub-slab insulation to meet soil gas control requirements
- Wood framework and plates cast into concrete are pressure-treated lumber
- **Note:** Let in sill is better building practice, if you choose not to use this design see sill plate detail below
- Footing is a minimum 24" (610mm) deep, with minimum 8" (200mm) above grade
- Good concrete curing practices are applied, and saw-cut control joints are provided every 14 – 18' (4-5m)
- Slab is reinforced with 3/4" (18.7mm) welded wire mesh a minimum of 6"x6" (152x152mm) and should be over-lapped a minimum of 8" (200mm) at joints



Note: This section illustrates both minimum OBC requirements and better building practices.